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July 7, 1961

MEMORANDUM FOR MR. BUNDY:

SUBJECT: Berlin Crisis and Civil Defense

1. The President announced a civil defense program on May 25, before the prospects of a crisis over Berlin had reached their present state. At bottom, the rationale of the program was that the probability of war in the kind of world we live in is such that some program of protection is necessary, and that, specifically, a substantial (but not, initially, a complete) program of fallout shelter should be begun as soon as possible.

The prospects in Europe underline the dangers of the kind of world we live in. Our own plans emphasize that we must face the risk of war. The need for a shelter program is thus reinforced, and the urgency of starting one is increased. The question arises, does the change in the situation since May 25 require either a change in the kind of program we propose, the first steps we take in executing it, or the terms in which it is presented. My answer to all of these questions is, essentially, no.

2. To take the last one first. In presenting his civil defense program, I think the President and his agents should certainly point to the Berlin situation as underlining the need; but not as providing a new rationale. It is true that a fallout shelter program will not, in itself, deter war, and that a blast shelter program is too expensive in terms of its benefits, as well as to long-run to be thought of as an appropriate response in the current situation.

Finally, I do not think determination is measured by noise; and the level of perceived threat required to motivate a large-scale crash program would demand a very high level of political noise to create.

3. The more basic question is, do we want a different program? Again, I would say no. It is still true in the present situation that we wish to be firm without being provocative; and it is still true that we know

we need fallout shelter, but do not yet see the right relation between blast shelter and active defense. Thus the factors which determined the choice before still point to the same choice. However, there is a clear argument of urgency for speeding up the time scale of the initial steps. It remains true that the first and most productive effort is to make use of existing space which can be readily converted. The suggested program of 18 May (Memo for Mr. Sorenson) allowed a year for the process of survey and spread the improvements over four years; this process could be speeded up by a higher rate of expenditure, but probably the survey could not be completed in less than nine months in any event. Something could be done in the way of preparing as soon as possible the appropriate legislation recommendations for incentives and regulations that are required to get shelters incorporated into new buildings, so that Congress could act before the end of this session. Finally, the NEAR alarm system could be organized in a fairly short time, if the Federal Government bore the whole expense and responsibility.

4. All this would still produce only a relatively small amount of shelter space by the end of the year. The suggested program of May 18 provided for 54 million shelter spaces in existing buildings at the end of four years. To achieve even five or six million of these by January 1, 1962 would require a large effort, since survey must proceed improvement; a highly optimistic estimate would be that a super-crash program might achieve 10 million, rather unevenly distributed among cities, and the question of how well-trained people would be to use them would still be open. It is in order to remind ourselves that while 5 (or a fortiori 10) million shelter spaces are nothing, the lives that they might save in the event of general war represent not the difference between 0 and 5 million casualties, but more like the difference between 40 and 35 million. This point, which it is indeed sobering to contemplate, is made in quantitative detail in the appendix, the substance of which I owe to Vincent McRae, though some of the language is mine.

Carl Kayser

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## APPENDIX

1. Casualties arising from nuclear attacks on this country have been investigated by SRI, RAND, ORC, and WSEC. The results of these investigations differ not only because they cover a wide range of contingencies, but also because of different assumptions about parameters whose values are not precisely known. Principal among these are the amount and quality of shelter available in existing structures, the distribution and amount of fall out to be expected from any fixed attack, enemy targeting doctrine, and the behavior of the American population during and following an attack. Considering that all of the data developed is based upon reasonably well-informed judgments as to the values of the unknown parameters, it is reasonable to consider the limits of the data to represent the range of likely results.
2. Figure 1 presents the best case, for it is assumed there that the enemy attacks only targets of military significance. Lower fatality values arise from attacks that are most discriminate; for in these data detonations are air bursts and only strategic forces are targeted. If an air base or a missile site is close to a city so that a missile aimed at the base would have a significant chance of hitting the city the base would not be attacked. The highest values represent attacks where military targeting is least discriminate, or attacks in which all detonations are

ground bursts and ports and military bases of all types are attacked. Estimates of fatalities are shown for an untrained population with little warning and no shelters ( i.e., are made for the current situation ) and for situations that are roughly comparable to the full implementation of the currently-proposed program plus the building of shelter for the full population. ( Note that the data are based upon a U.S. population of 200 million, and hence have to be scaled downward slightly for current population. ) It appears instructive to consider a sample attack.

3. Let us suppose that 350 MT of fissionable material are delivered upon this country in a military-oriented attack. This could be accomplished by 100 7 - MT ICBM's with warheads that are 50% fission, or by a number of other combinations of bomber and submarine-delivered weapons. From the data developed at the agencies cited, we could expect from 11 to 40 million fatalities if no shelters were utilized, and from 5 to 9 million fatalities if the full shelter program were implemented. If the shelter program were not complete when the attack occurred, then the fatality range should lie between the two ranges cited. But if the USSR could deliver 100 weapons, the shelter program would not deny the capability of inflicting casualties in the range 11 to 40 million, for there is also an option that includes an attack on U.S. cities as well as on U.S. strategic forces.

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4. The second Figure shows the results of diverting some of the 100 weapons to attacks on U.S. cities. It is clear that without shelter, the 100 weapons could cause from 62 to 100 million fatalities; whereas full utilization of the shelter that is estimated to exist could reduce fatalities to from 39 to 56 million. To cause 11 million casualties, even with full shelter utilization, requires only 3 to 4 weapons allocated to cities, and to cause 40 million fatalities requires from 55 to about 100 weapons in the same case. The graph shows clearly that under the most optimistic assumptions used in the research studies examined, the diversion of as few as 15 missiles to the attack of cities will cause between 10 and 20 million fatalities, even with full implementation of the proposed program. Though the program could save many lives, it could not assure saving these 10 to 20 million lives. In sum, assuming full implementation of the program prior to a crisis, the best values of the uncertain parameters, and that an attack, either retaliatory or pre-emptive, by a force capable of delivering 100 weapons is expected, the data developed suggest the following:

Without shelter, fatalities will certainly exceed 10 million; and could be as large as 100 million;

With a full implementation of the proposed program, fallout shelter program, hardening and shelter space for every person, fatalities will exceed 5 million, and

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in the worst case could be as large as 56 million.

An attack delivering 100 weapons is not unreasonable. Thus the shelter program would save at least five million lives in a situation in which 10 million fatalities would occur without shelter, or it might save about 44 million lives in a situation in which 100 million fatalities would occur without shelter; and the choice of situation -- 5 out of 10 million or 44 out of 100 million -- would not be ours, but the Soviets.

5. In six months, the most optimistic view would suggest that 10 million shelter spaces could be completed, instead of the full 200 million on which the above calculations are based. Thus the savings figures would be reduced in the same proportion, and casualties would be at best nearly 10 million, and might rise to nearly the full 100 million.

6. These estimates do not, of course, result from a war games analysis of what the Soviets could in fact achieve, but only a set of assumptions about "reasonable attacks".